

65.10(9) *Decision by the commission.* The director shall schedule a hearing on a demand pursuant to 65.10(7) or 65.10(8)“a” for consideration at the next regular meeting of the commission and notify the county board of supervisors and the applicant of the time and place. However, if the next regular meeting of the commission will take place more than 35 days after receipt of the demand for hearing, the director shall schedule a special in-person meeting or an electronic meeting of the commission pursuant to Iowa Code section 21.8. The director shall provide the applicant with copies of all documents submitted by the county board of supervisors and a copy of the department’s file on the permit application within three days after receipt of the county board of supervisors’ comments. The applicant may submit responses or other documents for consideration by the commission postmarked or hand-delivered at least 14 days prior to the date of consideration by the commission. Consideration by the commission is not a contested case. Oral participation before the commission will be limited to time periods specified by the commission and, unless otherwise determined by the commission, to argument by representatives from the county board of supervisors, the applicant and the department. The decision by the commission shall be stated on the record and shall be final agency action pursuant to Iowa Code chapter 17A. If the commission reverses or modifies the department’s decision, the department shall issue the appropriate permit or letter of denial to the applicant. The letter of decision shall contain the reasons for the action regarding the permit.

65.10(10) *Complaint investigations.* Complaints of violations of Iowa Code chapter 455B and this rule, which are received by the department or are forwarded to the department by a county, following a county board of supervisors’ determination that a complainant’s allegation constitutes a violation, shall be investigated by the department if it is determined that the complaint is legally sufficient and an investigation is justified.

a. If after evaluating a complaint to determine whether the allegation may constitute a violation, without investigating whether the facts supporting the allegation are true or untrue, the county board of supervisors shall forward its finding to the department director.

b. A complaint is legally sufficient if it contains adequate information to investigate the complaint and if the allegation constitutes a violation, without investigating whether the facts supporting the allegation are true or untrue, of rules adopted by the department, Iowa Code chapter 455B or environmental standards in regulations subject to federal law and enforced by the department.

c. The department in its discretion shall determine the urgency of the investigation, and the time and resources required to complete the investigation, based upon the circumstances of the case, including the severity of the threat to the quality of surface water or groundwater.

d. The department shall notify the complainant and the alleged violator if an investigation is not conducted specifying the reason for the decision not to conduct an investigation.

e. The department will notify the county board of supervisors where the violation is alleged to have occurred before doing a site investigation unless the department determines that a clear, present and impending danger to the public health or environment requires immediate action.

f. The county board of supervisors may designate a county employee to accompany the department on the investigation of any site as a result of a complaint.

g. A county employee accompanying the department on a site investigation has the same right of access to the site as the department official conducting the investigation during the period that the county designee accompanies the department official. The county shall not have access to records required in subrule 65.17(12) or the current manure management plan maintained at the facility.

h. Upon completion of an investigation, the department shall notify the complainant of the results of the investigation, including any anticipated, pending or complete enforcement action arising from the investigation. The department shall deliver a copy of the notice to the animal feeding operation that is the subject of the complaint, any alleged violators if different from the animal feeding operation and the county board of supervisors of the county where the violation is alleged to have occurred.

i. When entering the premises of an animal feeding operation, both of the following shall apply to a person who is a departmental official, an agent of the department, or a person accompanying the departmental official or agent:

(1) The person may enter at any reasonable time in and upon any private or public property to investigate any actual or possible violation of this chapter or the rules or standards adopted under this chapter. However, the owner or person in charge shall be notified.

1. If the owner or occupant of any property refuses admittance to the operation, or if prior to such refusal the director demonstrates the necessity for a warrant, the director may make application under oath or affirmation to the district court of the county in which the property is located for the issuance of a search warrant.

2. In the application the director shall state that an inspection of the premises is mandated by the laws of this state or that a search of certain premises, areas, or things designated in the application may result in evidence tending to reveal the existence of violations of public health, safety, or welfare requirements imposed by statutes, rules or ordinances established by the state or a political subdivision thereof. The application shall describe the area, premises, or thing to be searched, give the date of the last inspection if known, give the date and time of the proposed inspection, declare the need for such inspection, recite that notice of desire to make an inspection has been given to affected persons and that admission was refused if that be the fact, and state that the inspection has no purpose other than to carry out the purpose of the statute, ordinance, or regulation pursuant to which inspection is to be made. If an item of property is sought by the director, it shall be identified in the application.

3. If the court is satisfied from the examination of the applicant, and of other witnesses, if any, and of the allegations of the application of the existence of the grounds of the application, or that there is probable cause to believe their existence, the court may issue such search warrant.

4. In making inspections and searches pursuant to the authority of this rule, the director must execute the warrant:

- Within ten days after its date.
- In a reasonable manner, and any property seized shall be treated in accordance with the provisions of Iowa Code chapters 808, 809, and 809A.
- Subject to any restrictions imposed by the statute, ordinance or regulation pursuant to which inspection is made.

(2) The person shall comply with standard biosecurity requirements customarily required by the animal feeding operation which are necessary in order to control the spread of disease among an animal population.

567—65.11(455B) Confinement feeding operation separation distance requirements. All animal feeding operation structures shall be separated from locations and objects as specified in this rule regardless of whether a construction permit is required. Exceptions are allowed to the extent provided in 567—65.12(455B).

65.11(1) Separation from residences, businesses, churches, schools, public use areas, and thoroughfares shall be as specified in Iowa Code section 455B.162 and summarized in Table 6 at the end of this chapter. The residence, business, church, school, public use area or thoroughfare must exist at the time an applicant submits an application for a construction permit to the department or at the time a manure management plan is submitted if a construction permit is not required, or at the time construction of the animal feeding operation structure begins if a construction permit or manure management plan is not required.

65.11(2) Separation from surface intakes, wellheads or cisterns of agricultural drainage wells, known sinkholes, water sources and major water sources shall be as specified in Iowa Code section 455B.204 and summarized in Table 6 at the end of this chapter.

65.11(3) For structures constructed after March 20, 1996, the separation to wells shall be as specified in Table 6 at the end of this chapter.

65.11(4) Unformed manure storage structures shall not be constructed or expanded in an agricultural drainage well area as specified in Iowa Code section 455I.5.

65.11(5) The distance between animal feeding operation structures and locations or objects from which separation is required shall be measured horizontally by standard survey methods between the closest point of the location or object (not a property line) and the closest point of the animal feeding operation structure.

a. Measurement to an anaerobic lagoon or earthen manure storage basin shall be to the point of maximum allowable level of manure pursuant to paragraph 65.2(3) “*b.*”

b. Measurement to a public use area shall be to the facilities which attract the public to congregate and remain in the area for significant periods of time, not to the property line.

c. Measurement to a major water source or watercourse shall be to the top of the bank of the stream channel of a river or stream or the ordinary high water mark of a lake or reservoir.

d. Measurement to a thoroughfare shall be to the closest point of the right-of-way.

e. The separation distance for an animal feeding operation structure qualifying for the exemption to separation distances under 65.12(3) “*b*”(1) shall be measured from the closest point of the animal feeding operation structure which is constructed or expanded after December 31, 1998.

567—65.12(455B) Exemptions to confinement feeding operation separation distance requirements.

65.12(1) As specified in Iowa Code section 455B.165, the separation required from residences, businesses, churches, schools, public use areas and thoroughfares specified in Iowa Code section 455B.162 and summarized in Table 6 at the end of this chapter shall not apply to the following:

a. A confinement feeding operation structure which stores manure exclusively in a dry form.

b. A confinement feeding operation structure, other than an unformed manure storage structure, if the structure is part of a small animal feeding operation.

c. An animal feeding operation structure which is constructed or expanded, if the titleholder of the land benefiting from the distance separation requirement executes a written waiver with the titleholder of the land where the structure is located, under such terms and conditions that the parties negotiate. The written waiver becomes effective only upon the recording of the waiver in the office of the recorder of deeds of the county in which the benefited land is located. The benefited land is the land upon which is located the residence, business, church, school or public use area from which separation is required. The filed waiver shall preclude enforcement by the department of the separation distance requirements of Iowa Code section 455B.162.

d. An animal feeding operation structure closer than the distances in Table 6 at the end of this chapter from a residence, business, church, school or public use area, if the residence, business, church, school or public use area was constructed or expanded after the date that the animal feeding operation commenced operating. An animal feeding operation commences operating when it is first occupied by animals. A change in ownership or expansion of the animal feeding operation does not change the date the operation commenced operating.

65.12(2) As specified in Iowa Code section 455B.165(4), the separation required from thoroughfares specified in Iowa Code section 455B.162(5) and summarized in Table 6 at the end of this chapter shall not apply if permanent vegetation stands between the animal feeding operation structure and that part of the right-of-way from which separation is required. The permanent vegetation must be at least seedlings of plants with mature height of at least 20 feet and stand along the full length of the structure. The minimum vegetation requirement shall be a single row of conifers or columnar deciduous trees on 12- to 16-foot spacing. It is recommended that the advice of a professional forester or nursery stock expert, a department district forester or the Natural Resource Conservation Service be sought to identify tree species for a specific site.

65.12(3) As specified in Iowa Code section 455B.163, the separation required from residences, businesses, churches, schools, public use areas and thoroughfares specified in Iowa Code section 455B.162 and summarized in Table 6 at the end of this chapter shall not apply to confinement feeding operations constructed before the effective date of the separation distance in the following cases:

- a. The confinement feeding operation continues to operate, but does not expand.
- b. The animal feeding operation structure as constructed or expanded prior to January 1, 1999, complies with the distance requirements applying to that structure at the time of construction or expansion.
- c. The confinement feeding operation expands on or after January 1, 1999, and any of the following apply:

(1) The animal feeding operation structure as constructed or expanded complies with the separation requirements. The separation required shall be based on the animal weight capacity of the entire confinement feeding operation, including existing and proposed structures.

(2) All of the following apply to the expansion:

1. No portion of the confinement feeding operation after expansion is closer than before expansion to a location or object for which separation is required.
2. The animal weight capacity of the confinement feeding operation which did not comply with a separation requirement that went into effect on May 31, 1995, after expansion is not more than the lesser double its capacity on May 31, 1995, or of 625,000 pounds for animals other than bovine, or 1,600,000 pounds for bovine.
3. The animal weight capacity of a confinement feeding operation which complied with the separation requirements that went into effect on May 1, 1995, but did not comply with a separation requirement that went into effect on January 1, 1999, after expansion is not more than the lesser of double its capacity on January 1, 1999, or 625,000 pounds for animals other than bovine, or 1,600,000 pounds for bovine.

(3) The confinement feeding operation is expanded by replacing one or more unformed manure storage structures with one or more formed manure storage structures and all of the following apply:

1. The animal weight capacity of the portion of the operation that changes from unformed to formed manure storage does not increase.
2. Use of the replaced unformed manure storage structures is discontinued within one year after construction of the replacement formed manure storage structures.
3. The replacement formed manure storage structures do not provide more than 14 months of manure storage.
4. No portion of the operation after expansion is closer than before expansion to a location or object for which separation is required.

(NOTE: A construction permit is not required to construct the replacement formed manure storage structures if a permit would not be required for the construction if the unformed manure storage structures did not exist.)

65.12(4) As specified in Iowa Code section 455B.165(7), the separation required from a cemetery shall not apply to animal feeding operations structures on which construction or expansion began before January 1, 1999.

65.12(5) As specified in Iowa Code section 455B.204(3), the separation required from surface intakes, wellheads or cisterns of agricultural drainage wells, known sinkholes, major water sources and watercourses specified in Iowa Code section 455B.204 and summarized in Table 6 at the end of this chapter shall not apply to a farm pond, privately owned lake or a manure storage structure constructed with a secondary containment barrier according to subrule 65.15(17).

65.12(6) Variances to the well separation requirements may be granted by the director if the applicant provides an alternative that is substantially equivalent to the required separation or provides improved or greater protection for the well. Requests for a variance shall be made in writing at the time an application is submitted. The denial of a variance request may be appealed to the environmental protection commission.

567—65.13(455B) Separation distances from certain lakes, rivers and streams. Rescinded IAB 4/7/99, effective 5/12/99.

567—65.14(455B) Well separation distances for open feedlots. Open feedlots, open feedlot runoff control basins and open feedlot solids settling facilities shall be separated from wells as specified in Table 6 at the end of this chapter.

65.14(1) Rescinded IAB 4/7/99, effective 5/12/99.

65.14(2) Variances to this rule may be granted by the director if the applicant provides an alternative that is substantially equivalent to the rule or provides improved effectiveness or protection as required by the rule. Variance shall be made in writing at the time the application is submitted. The denial of a variance may be appealed to the commission.

567—65.15(455B) Manure storage structure design requirements. The requirements in this rule apply to all animal feeding operation structures unless specifically stated otherwise.

65.15(1) Drainage tile removal for new construction of a manure storage structure. Prior to constructing a manure storage structure, other than storage of manure in an exclusively dry form, the site for the animal feeding operation structure shall be investigated for drainage tile lines as provided in this subrule. All applicable records of known drainage tiles shall be examined for the existence of drainage tile lines.

a. Prior to excavation for the berm of an unformed manure storage structure, the owner of the unformed manure storage structure shall follow any one of the following procedures:

(1) An inspection trench of at least ten inches wide shall be dug around the structure to a depth of at least 6 feet from the original grade and at least 50 feet from the projected outside edge of the berm.

(2) A core trench shall be dug to a depth of at least 6 feet from grade at the projected center of the berm. After investigation for tile lines and any discovered tile lines are removed, an additional containment barrier shall be constructed underneath the center of the berm. The secondary containment shall meet the same percolation standards as the lagoon or basin with the lateral flow potential restricted to one-sixteenth of an inch per day.

b. The drainage tile lines discovered near an unformed manure storage structure shall be removed within 50 feet of the projected outside edge of the berm and within the projected site of the structure including under the berm. Drainage tile lines discovered upgrade from the structure shall be rerouted outside of 50 feet from the berm to continue the flow of drainage. Drainage tile lines installed at the time of construction to lower a groundwater table may remain where located. A device to allow monitoring of the water in the drainage tile lines installed to lower the groundwater table and a device to allow shutoff of the drainage tile lines shall be installed if the drainage tile lines do not have a surface outlet accessible on the property where the unformed manure storage structure is located. All other drainage tile lines discovered shall be rerouted, capped, plugged with concrete, Portland cement concrete grout or similar materials, or reconnected to upgrade tile lines.

c. The applicant for a construction permit for a formed manure storage structure shall investigate for tile lines during excavation for the structure. Drainage tile lines discovered upgrade from the structure shall be rerouted around the formed manure storage structure to continue the flow of drainage. All other drainage tile lines discovered shall be rerouted, capped, plugged with concrete, Portland cement concrete grout or similar materials or reconnected to upgrade tile lines. Drainage tile lines installed at the time of construction to lower a groundwater table may remain where located. A device to allow monitoring of the water in the drainage tile lines installed to lower the groundwater table and a device to allow shutoff of the drainage tile lines shall be installed if the drainage tile lines do not have a surface outlet accessible on the property where the formed manure storage structure is located.

d. An owner of a confinement feeding operation may utilize other proven methods approved by the department to discover drainage tile lines.

e. Variances to this subrule may be granted by the director if the owner of the confinement feeding operation provides an alternative that is substantially equivalent to the subrule or provides improved effectiveness or protection as required by the subrule. A request for a variance shall be made in writing at the time the application is submitted or prior to investigating for drainage tile, whichever is earlier. The denial of a variance may be appealed to the commission.

f. A waiver to this subrule may be granted by the director if sufficient information is provided that the location does not have a history of drainage tile.

65.15(2) Drainage tile removal around an existing manure storage structure. The owner of an aerobic structure, anaerobic lagoon or earthen manure storage basin or earthen waste slurry storage basin, other than an egg washwater storage structure, that is part of a confinement feeding operation with a construction permit granted before March 20, 1996, but after December 31, 1992, shall inspect by March 20, 1997, for drainage tile lines as provided in this subrule, and all applicable records of known drainage tiles shall be examined. The owner of an aerobic structure, anaerobic lagoon, earthen manure storage basin or earthen waste slurry storage basin, other than an egg washwater storage structure, that is part of a confinement feeding operation with a construction permit granted before January 1, 1993, but after May 31, 1985, shall have an inspection conducted by July 1, 2000, for drainage tiles as provided in this subrule, and all applicable records of known drainage tiles shall be examined.

a. Inspection shall be by digging an inspection trench of at least ten inches wide around the structure to a depth of at least 6 feet from the original grade and at least 50 feet from the outside edge of the berm. The owner first shall inspect the area where trenching is to occur and manure management records to determine if there is any evidence of leakage and, if so, shall contact the department for further instructions as to proper inspection procedures. The owner of a confinement feeding operation shall either obtain permission from an adjoining property owner or trench up to the boundary line of the property if the distance of 50 feet would require the inspection trench to go onto the adjoining property.

b. The owner of the confinement feeding operation may utilize other proven methods approved by the department to discover drainage tile lines.

c. The drainage tile lines discovered near an aerobic structure, anaerobic lagoon, earthen manure storage basin or earthen waste slurry storage basin, other than an egg washwater storage structure, shall be removed within 50 feet of the outside edge of the berm. Drainage tile lines discovered upgrade from the aerobic structure, anaerobic lagoon or earthen manure storage basin shall be rerouted outside of 50 feet from the berm to continue the flow of drainage. All other drainage tile lines discovered shall be rerouted, capped, plugged with concrete, Portland cement concrete grout or similar materials, or reconnected to upgrade tile lines. Drainage tile lines that were installed at the time of construction to lower a groundwater table may either be avoided if the location is known or may remain at the location if discovered.

d. The owner of an aerobic structure, anaerobic lagoon, earthen manure storage structure or an earthen waste slurry storage basin with a tile drainage system to artificially lower the groundwater table shall have a device to allow monitoring of the water in the drainage tile lines that lower the groundwater table and to allow shutoff of the drainage tile lines if the drainage tile lines do not have a surface outlet accessible on the property where the aerobic structure, anaerobic lagoon, earthen manure storage basin or earthen waste slurry storage basin is located.

e. If the owner of the confinement feeding operation discovers drainage tile that projects underneath the berm, it shall follow one of the following options:

(1) Contact the department to obtain permission to remove the drainage tile under the berm. The manure in the structure must be lowered to a point below the depth of the tile prior to removing the drainage tile from under the berm. Prior to using the structure, a new percolation test must be submitted to the department and approval received from the department.

(2) Grout the length of the tile under the berm to the extent possible. The material used to grout shall include concrete, Portland cement concrete grout or similar materials.

f. Variances to this subrule may be granted by the director if the applicant provides an alternative that is substantially equivalent to the subrule or provides improved effectiveness or protection as required by the subrule. A request for a variance shall be made in writing. The denial of a variance may be appealed to the commission.

g. A waiver to this subrule may be granted by the director if sufficient information is provided that the location does not have a history of drainage tile.

h. A written record describing the actions taken to determine the existence of tile lines, the findings, and actions taken to comply with this subrule shall be prepared and maintained as part of the manure management plan records.

65.15(3) Guidelines for drainage tile removal around an existing manure storage structure.

a. It is recommended that a manure storage structure, other than the storage of manure in an exclusively dry form, that is part of a confinement feeding operation with a construction permit granted before May 31, 1985, be inspected for drainage tile lines as provided in this subrule, and all applicable records of known drainage tiles may be examined. For an aerobic structure, anaerobic lagoon, earthen manure storage basin or earthen waste slurry storage basin, inspection may be by digging an inspection trench of at least ten inches wide around the structure at a depth of at least 6 feet from the original grade and at least 50 feet from the projected outside edge of the berm. The owner first should inspect the area where trenching is to occur and manure management records to determine if there is any evidence of leakage and, if so, shall contact the department for further instructions as to proper inspection procedures.

b. The drainage tile lines discovered may be removed within 50 feet of the outside edge of the berm. Drainage tile lines discovered upgrate from the structure may be rerouted outside of 50 feet from the berm to continue the flow of drainage. Drainage tile lines that were installed at the time of construction to lower a groundwater table may either be avoided if the location is known or may remain at the location if discovered. All other drainage tile lines discovered may be rerouted, capped, plugged with concrete, Portland cement concrete grout or similar materials or reconnected to upgrate tile lines. The owner of a confinement feeding operation should either obtain permission from an adjoining property owner or trench up to the boundary line of the property if the distance of 50 feet would require the inspection trench to go onto the adjoining property.

c. If the owner of a confinement feeding operation discovers drainage tile that projects underneath the berm, it may follow one of the following options:

(1) Contact the department to obtain permission to remove the drainage tile under the berm. The manure in the structure must be lowered to a point below the depth of the tile prior to removing the drainage tile from under the berm. Prior to using the structure, a new percolation test must be submitted to the department and approval received from the department.

(2) Grout the length of the tile under the berm to the extent possible. The material used to grout may include concrete, Portland cement concrete grout or similar materials.

d. The owner of a confinement feeding operation with a formed manure storage structure other than dry manure storage may inspect for tile lines. Drainage tile lines discovered upgrate from the structure may be rerouted around the formed manure storage structure to continue the flow of drainage. Drainage tile lines put in place during or after construction of the formed manure storage structure to relieve hydrologic pressure may remain where located. All other drainage tile lines discovered may be rerouted, capped, plugged with concrete, Portland cement concrete grout or similar materials or reconnected to upgrate tile line.

65.15(4) Earthen waste slurry storage basins. An earthen waste slurry storage basin shall have accumulated manure removed at least twice each year unless there is sufficient basin capacity to allow removal of manure once each year and maintain freeboard as determined pursuant to 65.2(3)“b.”

65.15(5) Earthen manure storage basins. An earthen manure storage basin shall have accumulated manure removed at least once each year. An earthen manure storage basin may have enough manure storage capacity to contain the manure from the confinement feeding operation for up to 14 months and maintain freeboard as determined pursuant to 65.2(3)“b.”

65.15(6) Soil testing for earthen structures. Applicants for construction permits for earthen manure storage structures shall submit soils information according to this subrule for the site of the proposed structure. All subsurface soil classification shall be based on American Society for Testing and Materials Designations D 2487-92 or D 2488-90. Soil corings shall be taken to determine subsurface soil characteristics and groundwater elevation and direction of flow of the proposed site for an anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin. Soil corings shall be conducted by a qualified person normally engaged in soil testing activities. Data from the soil corings shall be submitted with a construction permit application and shall include a description of the geologic units encountered, and a discussion of the effects of the soil and groundwater elevation and direction of flow on the construction and operation of the anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin. All soil corings shall be taken by a method that identifies the continuous soil profile and does not result in the mixing of soil layers. The number and location of the soil corings will vary on a case-by-case basis as determined by the designing engineer and accepted by the department. The following are minimum requirements:

a. A minimum of four soil corings reflecting the continuous soil profile is required for each anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin. Corings which are intended to represent soil conditions at the corner of the structure must be located within 50 feet of the bottom edge of the structure and spaced so that one coring is as close as possible to each corner. Should there be no bottom corners, corings shall be equally spaced around the structure to obtain representative soil information for the site. An additional coring will be required if necessary to ensure that one coring is at the deepest point of excavation. For an anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin larger than 4 acres water surface area, one additional coring per acre is required for each acre above 4 acres surface area.

b. All corings shall be taken to a minimum depth of ten feet below the bottom elevation of the anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin.

c. At least one coring shall be taken to a minimum depth of 25 feet below the bottom elevation of the anaerobic lagoon, aerobic structure, earthen egg washwater storage structure, or earthen manure storage basin or into bedrock, whichever is shallower.

d. Upon abandonment of the soil core holes, all soil core holes including those developed as temporary water level monitoring wells shall be plugged with concrete, Portland cement concrete grout, bentonite, or similar materials.

65.15(7) Hydrology.

a. Groundwater table. A minimum separation of four feet between the top of the liner on any earthen aerobic structure, anaerobic lagoon, or earthen manure storage basin floor and the groundwater table is recommended; however, in no case shall the top of the liner on an earthen aerobic structure, anaerobic lagoon, or earthen manure storage basin floor be below the groundwater table. If the groundwater table is less than two feet below the top of the liner on an earthen aerobic structure, anaerobic lagoon, or earthen manure storage basin floor, the aerobic structure, anaerobic lagoon, or earthen manure storage basin shall be provided with a synthetic liner as described in 65.15(12)“f.”

b. Permanent artificial lowering of groundwater table. The groundwater table around an anaerobic lagoon, aerobic structure, or earthen manure storage basin may be artificially lowered to levels required in paragraph “a” by using a gravity flow tile drainage system or other permanent nonmechanical system for artificial lowering of the groundwater table. For a permitted animal feeding operation, detailed engineering and soil drainage information shall be provided with a construction permit application for an earthen aerobic structure, anaerobic lagoon or earthen manure storage basin to confirm the adequacy of the proposed permanent system to provide the required drainage without materially increasing the seepage potential of the site. (See 65.15(1)“b” for monitoring and shutoff requirements for drainage tile lines installed to lower the groundwater table.) For formed manure storage structures partially or completely constructed below the normal soil surface, a tile drainage system or other permanent system for artificial lowering of groundwater levels shall be installed around the structure if the groundwater table is above the bottom of the structure.

c. *Determination of groundwater table.* For purposes of this rule, groundwater table is the seasonal high water table determined by a licensed professional engineer, a groundwater professional certified pursuant to 567—Chapter 134, or qualified staff from the department or Natural Resources Conservation Service (NRCS). If a construction permit is required, the department must approve the groundwater table determination.

(1) Current groundwater levels shall be measured using at least one of the following for either formed or unformed structures:

1. Temporary monitoring wells. Each of the three temporary monitoring wells shall be developed according to 567—subrule 110.11(8). The top of the well screen shall be within 5 feet of the ground surface. Each well shall be extended to at least 2 feet below the bottom of the liner of an unformed manure storage structure, or to at least 2 feet below the footings of a formed manure storage structure.

- Unformed structures. For an unformed manure storage structure, each monitoring well may be installed in the existing boreholes resulting from the corings required in subrule 65.15(6).

- Formed structures. For a formed manure storage structure, at least three temporary monitoring wells shall be installed as close as possible to three corners of the structure, with one of the wells close to the corner of deepest excavation. If the formed structure is circular, the three monitoring wells shall be equally spaced and one well shall be placed at the point of deepest excavation.

2. Test pits. The department may allow use of test pits in lieu of temporary monitoring wells if seasonal variation in climatic patterns, soil and geologic conditions prevent accurate determination of the seasonal high water table or prior to the construction of an unformed manure storage structure liner to ensure that the required separation distance to the groundwater table is being met. Test pits will be configured 3 feet × 4 feet × 4 feet, or equivalent volume, and the bottom of each pit shall be 2 feet below the floor of the proposed anaerobic lagoon, earthen manure storage basin, earthen aerobic structure or settled open feedlot effluent basin. Each pit shall be allowed to remain open and unaltered for a minimum of seven days for viewing by the department or NRCS qualified staff for the determination of soil characteristics and related groundwater influence. Adequate protection (temporary berms and covers) shall be provided to prevent surface runoff from entering the test pits. One test pit shall be located in each corner and one in the center of the proposed manure control structure, unless otherwise specified by the department. A description of the materials present in the test pit shall be documented by all of the following:

- Digital photos;
- Description of soils including mottling;
- Construction specifications; and
- Weather conditions both prior to and during the period in which test pits are open.

(2) The seasonal high water table shall be determined by measuring the groundwater level in the temporary monitoring wells not earlier than seven days following installation and shall include consideration of NRCS soil survey information, soil characteristics such as color and mottling, other existing water table data, and other pertinent information. If a drainage system for artificially lowering the groundwater table will be installed in accordance with the requirements of paragraph 65.15(7) “b,” the level to which the groundwater table will be lowered will be considered to represent the seasonal high water table.

65.15(8) Karst features. The anaerobic lagoon or earthen manure storage basin shall not be located on a site that exhibits Karst features such as sinkholes, or solution channeling generally occurring in areas underlain by limestone or dolomite.

65.15(9) Bedrock separation. A minimum of four feet of separation between an unformed manure storage structure bottom and any bedrock formation is required. A ten-foot separation is recommended. A synthetic liner shall be required if the unformed structure is to be located less than ten feet above a carbonate or limestone formation.

65.15(10) Flooding protection.

a. An animal feeding operation structure proposed to be constructed on land that would be inundated by Q100 shall meet requirements as specified in 567—Chapters 70 to 76, unless otherwise prohibited according to 65.15(10)“*b.*”

b. A confinement feeding operation structure shall not be constructed on the one hundred year flood plain.

65.15(11) Seals for anaerobic lagoons, aerobic structures, and earthen manure storage basins. A lagoon or basin shall be sealed such that seepage loss through the seal is as low as practically possible. The percolation rate shall not exceed 1/16 inch per day at the design depth of the lagoon or basin. Following construction of the lagoon or basin, the results of a testing program which indicates the adequacy of the seal shall be provided to this department in writing prior to start-up of a permitted operation. The owner of a confinement feeding operation not required to obtain a construction permit shall keep a record of the construction methods and materials used to provide the seal and any test results available on the adequacy of the seal.

65.15(12) Aerobic structure, anaerobic lagoon, or earthen manure storage basin liner design and construction standards. An aerobic structure, anaerobic lagoon or earthen manure storage basin which receives a construction permit after January 21, 1998, shall comply with the following minimum standards in addition to subrule 65.15(11).

a. If the location of the proposed aerobic structure, anaerobic lagoon or earthen manure storage basin contains suitable materials as determined by the soil corings taken pursuant to subrule 65.15(6), those materials shall be compacted to establish a minimum of a 12-inch liner. A minimum initial overexcavation of 6 inches of material shall be required. The underlying material shall be scarified, reworked and compacted to a depth of 6 inches. The overexcavated materials shall be replaced and compacted.

b. If the location of the proposed aerobic structure, anaerobic lagoon or earthen manure storage basin does not contain suitable materials as determined by the soil corings taken in subrule 65.15(6), suitable materials shall be compacted to establish a minimum of a 24-inch liner.

c. Where sand seams, gravel seams, organic soils or other materials that are not suitable are encountered during excavation, the area where they are discovered shall be overexcavated a minimum of 24 inches and replaced with suitable materials and compacted.

d. All loose lift material must be placed in lifts of nine inches or less and compacted. The material shall be compacted at or above optimum moisture content and meet a minimum of 95 percent of the maximum density as determined by the Standard Proctor test after compaction.

e. For purposes of this rule, suitable materials means soil, soil combinations or other similar material that is capable of meeting the permeability and compaction requirements. Sand seams, gravel seams, organic soils or other materials generally not suitable for anaerobic lagoon, aerobic structure, or earthen manure storage basin construction are not considered suitable materials.

f. As an alternative to the above standards, a synthetic liner may be used. If the use of a synthetic liner is planned for an earthen aerobic structure, an anaerobic lagoon, or earthen manure storage basin, the permit application shall outline how the site will be prepared for placement of the liner, the physical, chemical, and other pertinent properties of the proposed liner, and information on the procedures to be used in liner installation and maintenance. In reviewing permit applications which involve use of synthetic liners, DNR will consider relevant synthetic liner standards adopted by industry, governmental agencies, and professional organizations as well as technical information provided by liner manufacturers and others.

65.15(13) Anaerobic lagoon design standards. An anaerobic lagoon shall meet the requirements of this subrule.

a. General.

(1) Depth. Liquid depth shall be at least 8 feet but 15 to 20 feet is preferred if soil and other site conditions allow.

(2) Inlet. One subsurface inlet at the center of the lagoon or dual (subsurface and surface) inlets are preferred to increase dispersion. If a center inlet is not provided, the inlet structure shall be located at the center of the longest side of the anaerobic lagoon.

(3) Shape. Long, narrow anaerobic lagoon shapes decrease manure dispersion and should be avoided. Anaerobic lagoons with a length-to-width ratio of greater than 3:1 shall not be allowed.

(4) Aeration. Aeration shall be treatment as an "add-on process" and shall not eliminate the need for compliance with all anaerobic lagoon criteria contained in these rules.

(5) Manure loading frequency. The anaerobic lagoon shall be loaded with manure and dilution water at least once per week.

(6) Design procedure. Total anaerobic lagoon volume shall be determined by summation of minimum stabilization volume; minimum dilution volume (not less than 50 percent of minimum stabilization volume); manure storage between periods of disposal; and storage for 8 inches of precipitation.

(7) Manure storage period. Annual or more frequent manure removal from the anaerobic lagoon, preferably prior to May 1 or after September 15 of the given year, shall be practiced to minimize odor production. Design manure storage volume between disposal periods shall not exceed the volume required to store 14 months' manure production. Manure storage volume shall be calculated based on the manure production values found in Table 5 at the end of this chapter.

b. Minimum stabilization volume and loading rate.

(1) For all animal species other than beef cattle, there shall be 1000 cubic feet minimum design volume for each 5 pounds of volatile solids produced per day if the volatile solids produced per day are 6000 pounds or fewer and for each 4 pounds if the volatile solids produced per day are more than 6000 pounds. For beef cattle, there shall be 1000 cubic feet minimum design volume for each 10 pounds of volatile solids produced per day.

(2) In Lyon, Sioux, Plymouth, Woodbury, Osceola, Dickinson, Emmet, Kossuth, O'Brien, Clay, Palo Alto, Cherokee, Buena Vista, Pocahontas, Humboldt, Ida, Sac, Calhoun, and Webster counties for all animal species other than beef there shall be 1000 cubic feet minimum design volume for each 4.5 pounds of volatile solids per day if the volatile solids produced per day are 6000 pounds or fewer. However, if a water analysis as required in 65.15(3)"c"(2) below indicates that the sulfate level is below 500 milligrams per liter, then the rate is 1000 cubic feet for each 5.0 pounds of volatile solids per day.

(3) Credit shall be given for removal of volatile solids from the manure stream prior to discharge to the lagoon. The credit shall be in the form of an adjustment to the volatile solids produced per day. The adjustments shall be at the rate of 0.50 pound for each pound of volatile solids removed. For example, if a swine facility produces 7000 pounds of volatile solids per day, and if 2000 pounds of volatile solids per day are removed, the volatile solids produced per day would be reduced by 1000 pounds, leaving an adjusted pounds of volatile solids produced per day of 6000 pounds (for which the loading rate would be 5 pounds according to subparagraph (1) above).

(4) Credit shall be given for mechanical aeration if the upper one-third of the lagoon volume is mixed by the aeration equipment and if at least 50 percent of the oxygen requirement of the manure is supplied by the aeration equipment. The credit shall be in the form of an increase in the maximum loading rate (which is the equivalent of a decrease in the minimum design volume) in accordance with Table 8.

(5) If a credit for solids removal is given in accordance with subparagraph (3) above, the credit for qualified aeration shall still be given. The applicant shall submit evidence of the five-day biochemical oxygen demand (BOD5) of the manure after the solids removal so that the aeration credit can be calculated based on an adjustment rate of 0.50 pound for each pound of solids removed.

(6) American Society of Agricultural Engineers (ASAE) standards, "Manure Production and Characteristics," D384.1, or Midwest Plan Service-18 (MWPS-18), Table 2-1, shall be used in determining the BOD5 production and volatile solid production of various animal species.

c. Water supply.

(1) The source of the dilution water discharged to the anaerobic lagoon shall be identified.

(2) The sulfate concentration of the dilution water to be discharged to the anaerobic lagoon shall be identified. The sulfate concentration shall be determined by standard methods as defined in 567—60.2(455B).

(3) A description of available water supplies shall be provided to prove that adequate water is available for dilution. It is recommended that, if the sulfate concentration exceeds 250 mg/l, then an alternate supply of water for dilution should be sought.

d. Initial lagoon loading. Prior to the discharge of any manure to the anaerobic lagoon, the lagoon shall be filled to a minimum of 50 percent of its minimum stabilization volume with fresh water.

e. Lagoon manure and water management during operation. Following initial loading, the manure and water content of the anaerobic lagoon shall be managed according to either of the following:

(1) For single cell lagoons or multicell lagoons without a site-specific lagoon operation plan. The total volume of fresh water for dilution added to the lagoon annually shall equal one-half the minimum stabilization volume. At all times, the amount of fresh water added to the lagoon shall equal or exceed the amount of manure discharged to the lagoon.

(2) For a two or three cell anaerobic lagoon. The manure and water content of the anaerobic lagoon may be managed in accordance with a site-specific lagoon operation plan approved by the department. The lagoon operation plan must describe in detail the operational procedures and monitoring program to be followed to ensure proper operation of the lagoon. Operational procedures shall include identifying the amounts and frequencies of planned additions of manure, fresh water and recycle water, and amount and frequencies of planned removal of solids and liquids. Monitoring information shall include locations and intervals of sampling, specific tests to be performed, and test parameter values used to indicate proper lagoon operation. As a minimum, annual sampling and testing of the first lagoon cell for electrical conductivity (EC) and either chemical oxygen demand (COD) or total ammonia (NH₃ + NH₄) shall be required.

f. Manure removal. If the anaerobic lagoon is to be dewatered once a year, manure should be removed to approximate the annual manure volume generated plus the dilution water used. If the anaerobic lagoon is to be dewatered more frequently, the anaerobic lagoon liquid level should be managed to maintain adequate freeboard.

65.15(14) Concrete standards. A formed manure storage structure which is constructed of concrete on or after March 24, 2004, that is part of a confinement feeding operation other than a small animal feeding operation shall meet the following minimum standards. For the purpose of this subrule, a “PE” is a professional engineer licensed in the state of Iowa and an “NRCS engineer” is an engineer working for the USDA Natural Resources Conservation Service (NRCS). (CAVEAT: These standards are not intended to address other site-related engineering and construction considerations beyond the department’s jurisdiction).

a. Nondry manure storage. The following minimum concrete standards are required for a formed manure storage structure other than that used for the storage of manure exclusively in a dry form. A formed manure storage structure must be designed in accordance with one of the following design methods:

(1) Engineering report, plans and specifications prepared and sealed by a PE or an NRCS engineer. Design considerations shall be in conformance with the American Concrete Institute (ACI) Building Code ACI 318, ACI 360 or ACI 350; or Portland Cement Association (PCA) publication EB075, EB001 or IS072; or MidWest Plan Service (MWPS) publication MWPS-36 or MWPS TR-9, and shall include all of the following:

1. The floors shall be a minimum of 5 inches thick. Nondestructive methods to verify the floor slab thickness may be required by the department. The results shall indicate that at least 95 percent of the floor slab area meets the minimum required thickness. In no case shall the floor slab thickness be less than 4½ inches.

2. Wire mesh shall not be used as primary reinforcement for a formed manure storage structure with a depth of 4 feet or more. Fiber shall not be used as reinforcement.

3. Waterstops shall be installed in all areas where fresh concrete meets hardened concrete. Waterstops shall be made of plastic, rolled bentonite or similar materials approved by the department.

4. The vertical steel of all walls shall be extended into the footing and be bent at 90° or a separate dowel shall be installed. As an alternate to the 90° bend, the dowel may be extended at least 12 inches into the footing, with a minimum concrete cover of 3 inches at the bottom. In lieu of dowels, mechanical means or alternate methods may be used as anchorage of interior walls to footings.

(2) If a formed manure storage structure is not designed and sealed by a PE or an NRCS engineer, the design and specifications shall be in conformance with MWPS-36 (for a belowground rectangular tank) or MWPS TR-9 (for a circular tank); or in accordance with Appendix D at the end of this chapter (for a belowground, laterally braced rectangular tank). In addition, all of the following concrete standards shall apply:

1. The finished subgrade of a formed manure storage structure shall be graded and compacted to provide a uniform and level base and shall be free of vegetation, manure and debris. For the purpose of this subrule, "uniform" means a finished subgrade with similar soils.

2. When the groundwater table, as determined in 65.15(7)"c," is above the bottom of the formed structure, a drain tile shall be installed along the footings to artificially lower the groundwater table pursuant to 65.15(7)"b." The drain tile shall be placed within 3 feet of the footings as indicated in Appendix D, Figure D-1, at the end of this chapter and shall be covered with a minimum of 2 inches of gravel, granular material, fabric or a combination of these materials to prevent plugging the drain tile.

3. All concrete shall have the following minimum as-placed compressive strengths and shall meet American Society for Testing and Materials (ASTM) standard ASTM C 94:

- 4,000 pounds per square inch (psi) for walls, floors, beams, columns and pumpouts;
- 3,000 psi for the footings.

The average concrete strength by testing shall not be below design strength. No single test result shall be more than 500 psi less than the minimum compressive strength.

4. Cementitious materials shall consist of portland cement conforming to ASTM C 150. Aggregates shall conform to ASTM C 33. Blended cements in conformance with ASTM C 595 are allowed only for concrete placed between March 15 and October 15. Portland-pozzolan cement or portland blast furnace slag blended cements shall contain at least 75 percent, by mass, of portland cement.

5. All concrete placed for walls shall be consolidated or vibrated, by manual or mechanical means, or a combination, in a manner which meets ACI 309.

6. All rebar used shall be a minimum of grade 40 steel. All rebar, with the exception of rebar dowels connecting the walls to the floor or footings, shall be secured and tied in place prior to the placing of concrete.

7. All wall reinforcement shall be placed so as to have a rebar cover of 2 inches from the inside face of the wall for a belowground manure storage structure. Vertical wall reinforcement should be placed closest to the inside face. Rebar placement shall not exceed tolerances specified in ACI 318.

8. The floor slab shall be a minimum of 5 inches thick. The floor slab of any formed manure storage structure with a depth of 4 feet or more shall have primary reinforcement consisting of a minimum of #4 rebar placed a maximum of 18 inches on center in each direction placed in a single mat. The floor slab of any formed manure storage structure with a depth less than 4 feet shall have shrinkage reinforcement consisting of a minimum of 6 × 6-W1.4 × W1.4 welded wire fabric. Floor slab reinforcement shall be located in the middle of the thickness of the floor slab. Nondestructive methods to verify the floor slab thickness may be required by the department. The results shall indicate that at least 95 percent of the floor slab area meets the minimum required thickness. In no case shall the floor slab thickness be less than 4½ inches.

9. The footing or the area where the floor comes in contact with the walls and columns shall have a thickness equal to the wall thickness, but in no case be less than 8 inches, and the width shall be at least twice the thickness of the footing. All exterior walls shall have footings below the frostline. Tolerances shall not exceed $-\frac{1}{2}$ inch of the minimum footing dimensions.

10. The vertical steel of all walls shall be extended into the footing, and be bent at 90° or a separate dowel shall be installed as a #4 rebar that is bent at 90° with at least 20 inches of rebar in the wall and extended into the footing within 3 inches of the bottom of the footing and extended at least 3 inches horizontally, as indicated in Appendix D, Figure D-1, at the end of this chapter. As an alternative to the 90° bend, the dowel may be extended at least 12 inches into the footing, with a minimum concrete cover of 3 inches at the bottom. Dowel spacing (bend or extended) shall be the same as the spacing for the vertical rebar. In lieu of dowels, mechanical means or alternate methods may be used as anchorage of interior walls to footings.

11. All walls shall be formed with rigid forming systems and shall not be earth-formed.

12. All concrete shall be cured for at least seven days after placing, in a manner which meets ACI 308, by maintaining adequate moisture or preventing evaporation. Proper curing shall be done by ponding, spraying or fogging water; or by using a curing compound that meets ASTM C 309; or by using wet burlap, plastic sheets or similar materials.

13. All construction joints in exterior walls shall be constructed to prevent discontinuity of steel and have properly spliced rebar placed through the joint. Waterstops shall be installed in all areas where fresh concrete will meet hardened concrete as indicated in Appendix D, Figures D-1 and D-2, at the end of this chapter. The waterstops shall be made of plastic, rolled bentonite or similar materials approved by the department.

14. Backfilling of the walls shall not start until the floor slats or permanent bracing have been installed. Backfilling shall be performed with material free of vegetation, large rocks or debris.

15. A formed manure storage structure with a depth greater than 12 feet shall be designed by a PE or an NRCS engineer.

b. Dry manure storage. A formed structure for the storage of manure exclusively in a dry form shall be designed and constructed in accordance with one of the following:

(1) Engineering report, plans and specifications prepared and sealed by a PE or an NRCS engineer. Design considerations shall be in conformance with the American Concrete Institute (ACI) Building Code ACI 318 or ACI 360; or Portland Cement Association (PCA) publication EB075, EB001 or IS072; or MidWest Plan Service (MWPS) publication MWPS-36.

(2) If a formed manure storage structure that stores manure exclusively in a dry form is to be constructed aboveground and the design is not prepared and sealed by a PE or an NRCS engineer, the requirements set forth in 65.15(14)“a”(2), numbered paragraphs “1,” “3,” “4,” “5,” “6,” “8” and “12,” shall apply. Consideration shall be given to internal and external loads including, but not limited to, wind loads, building load, manure pile and equipment vehicle loads.

(3) If the formed structure that stores manure exclusively in a dry form is to be constructed below or partially below the ground and the design is not prepared and sealed by a PE or an NRCS engineer, the requirements set forth in 65.15(14)“a”(2), numbered paragraphs “1” through “15,” shall apply. Wall design shall be in accordance with Appendix D at the end of this chapter or in accordance with MWPS-36. Consideration shall be given to internal and external loads including, but not limited to, lateral earth pressures, hydrostatic pressures, wind loads, manure pile and equipment vehicle loads.

c. Karst terrain—upgraded standards. If the site of the proposed formed manure storage structure is located in an area that exhibits karst terrain or an area that drains into a known sinkhole, the minimum concrete standards set forth in 65.15(14)“a” or “b” shall apply. In addition, the following requirements apply to all formed manure storage structures that store nondry or dry manure:

(1) A minimum 5-foot vertical separation distance between the bottom of a formed manure storage structure and limestone, dolomite, or other soluble rock is required if the formed manure storage structure is not designed by a PE or an NRCS engineer.

(2) If the vertical separation distance between the bottom of the proposed formed manure storage structure and limestone, dolomite, or other soluble rock is less than 5 feet, the structure shall be designed and sealed by a PE or an NRCS engineer who certifies the structural integrity of the structure. A 2-foot-thick layer of compacted clay liner material shall be constructed underneath the floor of the formed manure storage structure. However, it is recommended that any formed manure storage structure be constructed aboveground if the vertical separation distance between the bottom of the structure and the limestone, dolomite, or other soluble rock is less than 5 feet.

(3) In addition, in an area that exhibits karst terrain or an area that drains into a known sinkhole, a PE, an NRCS engineer or a qualified organization shall submit a soil exploration study based on the results from soil borings or test pits to determine the vertical separation between the bottom of the formed structure and limestone, dolomite, or other soluble rock. A minimum of two soil borings or two test pits, equally spaced within each formed structure, are required. After soil exploration is completed, each soil boring and pit shall be properly plugged with concrete grout, bentonite, or similar materials.

(4) Groundwater monitoring shall be performed as specified by the department.

(5) Backfilling shall not start until the floor slats have been placed or permanent bracing has been installed, and shall be performed with material free of vegetation, large rocks, or debris.

65.15(15) Berm erosion control.

a. The following requirements shall apply to any anaerobic lagoons, earthen aerobic structures, or earthen manure storage basins constructed after May 12, 1999.

(1) Concrete, riprap, synthetic liners or similar erosion control materials or measures shall be used on the berm surface below pipes where manure will enter the anaerobic lagoon, aerobic structure, or earthen manure storage basin.

(2) Concrete, riprap, synthetic liners or similar erosion control materials or measures of sufficient thickness and area to accommodate manure removal equipment and to protect the integrity of the liner shall be placed at all locations on the berm, side slopes, and base of the anaerobic lagoon, aerobic structure, or earthen manure storage basin where agitation or pumping may cause damage to the liner.

(3) Erosion control materials or measures shall be used at the corners of the anaerobic lagoon, aerobic structure, or earthen manure storage basin.

b. The owner of a confinement feeding operation with an anaerobic lagoon, earthen aerobic structure, earthen manure storage basin, earthen waste slurry storage basin, or earthen egg washwater storage structure shall inspect the structure berms at least semiannually for evidence of erosion. Erosion problems found which may impact either structural stability or liner integrity shall be corrected in a timely manner.

65.15(16) Agricultural drainage wells. After May 29, 1997, a person shall not construct a new or expand an existing earthen aerobic structure, earthen anaerobic lagoon, earthen manure storage basin, earthen waste slurry storage basin, or earthen egg washwater storage structure within an agricultural drainage well area.

65.15(17) Secondary containment barriers for manure storage structures. Secondary containment barriers used to qualify any operation for the exemption provision in subrule 65.12(5) shall meet the following:

a. A secondary containment barrier shall consist of a structure surrounding or downslope of a manure storage structure that is designed to contain 120 percent of the volume of manure stored above the manure storage structure's final grade. If the containment barrier does not surround the manure storage structure, upland drainage must be diverted.

b. The barrier may be constructed of earth, concrete, or a combination of both and shall not have a relief outlet or valve.

c. The base shall slope to a collecting area where storm water can be pumped out. If storm water is contaminated with manure, it shall be land-applied at normal fertilizer application rates in compliance with rule 65.3(455B).

d. Secondary containment barriers constructed entirely or partially of earth shall comply with the following requirements:

(1) The soil surface, including dike, shall be constructed to prevent downward water movement at rates greater than 1×10^{-6} cm/sec and shall be maintained to prevent downward water movement at rates greater than 1×10^{-5} cm/sec.

(2) Dikes shall not be steeper than 45 degrees and shall be protected against erosion. If the slope is 19 degrees or less, grass can be sufficient protection, provided it does not interfere with the required soil seal.

(3) The top width of the dike shall be no less than 3 feet.

e. Secondary containment barriers constructed of concrete shall be watertight and comply with the following requirements:

(1) The base of the containment structure shall be designed to support the manure storage structure and its contents.

(2) The concrete shall be routinely inspected for cracks, which shall be repaired with a suitable sealant.

65.15(18) Human sanitary waste shall not be directed to a manure storage structure or egg washwater storage structure.

65.15(19) Requirements for qualified operations. A confinement feeding operation that meets the definition of a qualified operation shall only use an aerobic structure for manure storage and treatment. This requirement does not apply to a confinement feeding operation that only handles manure in a dry form or to an egg washwater storage structure or to a confinement feeding operation which was constructed before May 31, 1995, and does not expand.

65.15(20) Aboveground formed manure storage structures with external outlet or inlet below the liquid level. A formed manure storage structure which is constructed to allow the storage of manure wholly or partially above ground and which has an external outlet or inlet below the liquid level shall have all of the following:

a. Two or more shutoff valves on any external outlet or inlet below the liquid level. At least one shutoff valve shall be located inside the structure and be operable if the external valve becomes inoperable or broken off.

b. All external outlets or inlets below the liquid level shall be barricaded, encased in concrete, or otherwise protected to minimize accidental destruction.

c. Construction shall be in compliance with the manufacturer's requirements.

d. An emergency response plan for retaining manure at the site and cleanup if the manure storage structure fails or there is any other type of accidental discharge. The plan shall consist of telephone numbers to comply with 65.2(9) and list of contractors, equipment, equipment technical support, and alternative manure storage or land application sites which can be used during inclement weather.

567—65.16(455B) Manure management plan requirements.

65.16(1) In accordance with Iowa Code section 455B.203 as amended by 2002 Iowa Acts, chapter 1137, section 38, the following persons are required to submit manure management plans to the department, including an original manure management plan and an updated manure management plan, as required by this rule:

a. An applicant for a construction permit for a confinement feeding operation. However, a manure management plan shall not be required of an applicant for an egg washwater storage structure.

b. The owner of a confinement feeding operation, other than a small animal feeding operation, if one of the following applies:

(1) The confinement feeding operation was constructed or expanded after May 31, 1985, regardless of whether the confinement feeding operation structure was required to have a construction permit.

(2) The owner constructs a manure storage structure, regardless of whether the person is required to be issued a permit for the construction pursuant to Iowa Code section 455B.200A as amended by 2002 Iowa Acts, chapter 1137, sections 28 and 29, or whether the person has submitted a prior manure management plan.

c. A person who applies manure in Iowa that was produced in a confinement feeding operation, other than a small operation, located outside of Iowa.

d. A research college is exempt from this subrule and the manure management plan requirements of rule 65.17(459) for research activities and experiments performed under the authority of the research college and related to animal feeding operations.

65.16(2) Effective February 13, 2002, an owner of a proposed confinement feeding operation who is required to file a manure management plan pursuant to paragraph 65.16(1)“b” shall submit the confinement feeding operation’s manure management plan to the department at least 30 days before the construction of an animal feeding operation structure begins, as that term is defined in subrules 65.8(1) and 65.8(2). After the manure management plan has been received by the department, the department will date-stamp the plan as received and provide written confirmation of receipt to the owner. In addition to the content requirements specified in rule 65.17(459), the owner shall include:

a. Documentation that the board of supervisors or auditor of the county where the confinement feeding operation is proposed to be located received a copy of the plan.

b. Information (e.g., maps, drawings, aerial photos) that clearly shows the intended location of the animal feeding operation structures and locations and animal weight capacities of any other confinement feeding operations within a distance of 2,500 feet in which the owner has an ownership interest or which the owner manages.

65.16(3) Scope of manure management plan; updated plans; annual compliance fee.

a. Each confinement feeding operation required to submit a manure management plan shall be covered by a separate manure management plan.

b. The owner of a confinement feeding operation who is required to submit a manure management plan under this rule shall submit an updated manure management plan on an annual basis to the department. The updated plan must reflect all amendments made during the period of time since the previous manure management plan submission. The owner of the animal feeding operation shall also submit the updated manure management plan on an annual basis to the board of supervisors of each county where the confinement feeding operation is located and to the board of supervisors of each county where manure from the confinement feeding operation is land-applied. If the owner of the animal feeding operation has not previously submitted a manure management plan to the board of supervisors of each county where the confinement feeding operation is located and each county where manure is land-applied, the owner must submit a complete manure management plan to each required county. The county auditor or other county official or employee designated by the county board of supervisors may accept the updated plan on behalf of the board. The updated plan shall include documentation that the county board of supervisors or other designated county official or employee received the manure management plan update. The department will stagger the dates by which the updated manure management plans are due and will notify each confinement feeding operation owner of the date on which the updated manure management plan is due. To satisfy the requirements of an updated manure management plan, an owner of a confinement feeding operation must submit one of the following:

- (1) A complete manure management plan;
- (2) A department-approved document stating that the manure management plan submitted in the prior year has not changed; or
- (3) A department-approved document listing all the changes made since the previous manure management plan was submitted and approved.

c. An annual compliance fee of \$0.15 per animal unit at the animal feeding operation shall accompany an annual manure management plan update submitted to the department for approval. The annual compliance fee is based on the animal unit capacity of the confinement feeding operation stated in the updated annual manure management plan submission. If the person submitting the manure management plan is a contract producer, as provided in Iowa Code chapter 202, the active contractor shall pay the annual compliance fee.

65.16(4) The department shall review and approve or disapprove all complete manure management plans within 60 days of the date they are received.

65.16(5) Manure shall not be removed from a manure storage structure, which is part of a confinement feeding operation required to submit a manure management plan, until the department has approved the plan. As an exception to this requirement, until July 1, 2002, the owner of a confinement feeding operation may remove and apply manure from a manure storage structure in accordance with a manure management plan submitted to the department prior to September 18, 2001, but which has not been approved within the required 60-day period. Manure shall be applied in compliance with rule 65.2(455B).

65.16(6) All persons required to submit a manure management plan to the department shall also pay to the department an indemnity fee as required in Iowa Code section 455J.3 except those operations constructed prior to May 31, 1995, which were not required to obtain a construction permit.

65.16(7) Any person submitting an original manure management plan must also pay to the department a manure management plan filing fee of \$250. This fee shall be included with each original manure management plan being submitted. If the confinement feeding operation is required to obtain a construction permit and to submit an original manure management plan as part of the construction permit requirements, the applicant must pay the manure management plan filing fee together with the construction permit application fee, which total \$500.

567—65.17(459) Manure management plan content requirements. All manure management plans are to be submitted on forms or electronically as prescribed by the department. The plans shall include all of the information specified in Iowa Code section 459.312 and as described below.

65.17(1) General.

a. A confinement feeding operation that is required to submit a manure management plan to the department shall not apply manure in excess of the nitrogen use levels necessary to obtain optimum crop yields. When a phosphorus index is required in a manure management plan as provided in 65.17(1) “d,” a confinement feeding operation shall not apply manure in excess of the rates determined in conjunction with the phosphorus index. Information to complete the required calculations may be obtained from the tables in this chapter, actual testing samples or from other credible sources including, but not limited to, Iowa State University, the United States Department of Agriculture (USDA), a licensed professional engineer, or an individual certified as a crop consultant under the American Registry of Certified Professionals in Agronomy, Crops, and Soils (ARCPACS) program, the Certified Crop Advisors (CCA) program, or the Registry of Environmental and Agricultural Professionals (REAP) program.

b. Manure management plans shall comply with the minimum manure control requirements of 65.2(455B) and the requirements for land application of manure in 65.3(455B).

c. Manure management plans shall include all of the following:

(1) The name of the owner and the name of the confinement feeding operation, including mailing address and telephone number.

(2) The name of the contact person for the confinement feeding operation, including mailing address and telephone number.

(3) The location of the confinement feeding operation identified by county, township, section, 1/4 section and, if available, the 911 address.

(4) The animal unit capacity of the confinement feeding operation and, if applicable, the animal weight capacity.

d. A person who submits a manure management plan shall include a phosphorus index as part of the manure management plan as follows:

(1) A person who submitted an original manure management plan prior to April 1, 2002, shall submit a phosphorus index with the first manure management plan update on and after August 25, 2008.

(2) A person who submitted an original manure management plan on or after April 1, 2002, but prior to October 25, 2004, shall submit a phosphorus index with the first manure management plan update on and after August 25, 2006.

(3) A person who submits an original manure management plan on and after October 25, 2004, shall include the phosphorus index as part of the original manure management plan and manure management plan updates.

65.17(2) *Manure management plans for sales of manure.* Selling manure means the transfer of ownership of the manure for monetary or other valuable consideration. Selling manure does not include a transaction where the consideration is the value of the manure, or where an easement, lease or other agreement granting the right to use the land only for manure application is executed.

a. Confinement feeding operations that will sell dry manure as a commercial fertilizer or soil conditioner regulated by the Iowa department of agriculture and land stewardship (IDALS) under Iowa Code chapter 200 or 200A shall submit a copy of their site-specific IDALS license or documentation that manure will be sold pursuant to Iowa Code chapter 200 or 200A, along with the department-approved manure management plan form for sales of dry manure. Operations completely covered by this paragraph are not required to meet other manure management plan requirements in this rule.

b. A confinement feeding operation not fully covered by paragraph “*a*” above and that has an established practice of selling manure, or a confinement feeding operation that contains an animal species for which selling manure is a common practice, shall submit a manure management plan that includes the following:

(1) Until a phosphorus index is required as part of the manure management plan, an estimate of the number of acres required for manure application shall be calculated by dividing the total nitrogen available to be applied from the confinement feeding operation by the crop usage rate. Crop usage rate may be estimated by using a corn crop usage rate factor and an estimate of the optimum crop yield for the property in the vicinity of the confinement feeding operation.

(2) When a phosphorus index is required as part of the manure management plan, an estimate of the number of acres required for manure application shall be calculated by one of the following methods:

1. Dividing the total phosphorus (as P₂O₅) available to be applied from the confinement feeding operation by the corn crop removal of phosphorus. The corn crop removal of phosphorus may be estimated by using the phosphorus removal rate in Table 4a at the end of this chapter and an estimate of the optimum crop yield for the property in the vicinity of the operation.

2. Totaling the quantity of manure that can be applied to each available field based on application rates determined in conjunction with the phosphorus index in accordance with 65.17(17), and ensuring that the total quantity that can be applied is equal to or exceeds the manure annually generated at the operation.

(3) The total nitrogen available to be applied from the confinement feeding operation.

(4) The total phosphorus (as P₂O₅) available to be applied from the confinement feeding operation if the phosphorus index is required in accordance with 65.17(1) “*d.*”

(5) An estimate of the annual animal production and manure volume or weight produced.

(6) A manure sales form, if manure will be sold, shall include the following information:

1. A place for the name and address of the buyer of the manure.

2. A place for the quantity of manure purchased.

3. The planned crop schedule and optimum crop yields.

4. A place for the manure application methods and the timing of manure application.

5. A place for the location of the field including the number of acres where the manure will be applied.

6. A place for the manure application rate.

7. When a phosphorus index is required as part of a manure management plan in accordance with 65.17(1)“d,” a place for a phosphorus index of each field receiving manure, as defined in 65.17(17)“a,” including the factors used in the calculation. A copy of the NRCS phosphorus index detailed report shall satisfy the requirement to include the factors used in the calculation.

(7) Statements of intent if the manure will be sold. The number of acres indicated in the statements of intent shall be sufficient according to the manure management plan to apply the manure from the confinement feeding operation. The permit holder for an existing confinement feeding operation with a construction permit may submit past records of manure sales instead of statements of intent. The statements of intent shall include the following information:

1. The name and address of the person signing the statement.

2. A statement indicating the intent of the person to purchase the confinement feeding operation’s manure.

3. The location of the farm where the manure can be applied including the total number of acres available for manure application.

4. The signature of the person who may purchase the confinement feeding operation’s manure.

(8) The owner shall maintain in the owner’s records a current manure management plan and copies of all of the manure sales forms; the sales forms must be completed and signed by each buyer of the manure and the applicant, and the copies must be maintained in the owner’s records for three years after each sale. Effective August 25, 2006, the owner shall maintain in the owner’s records copies of all of the manure sales forms for five years after each sale. An owner of a confinement feeding operation shall not be required to maintain current statements of intent as part of the manure management plan.

65.17(3) *Manure management plan for nonsales of manure.* Confinement feeding operations that will not sell all of their manure shall submit the following for that portion of the manure which will not be sold:

a. Calculations to determine the land area required for manure application.

b. The total nitrogen available to be applied from the confinement feeding operation.

c. The planned crop schedule and optimum crop yields.

d. Manure application methods and timing of the application.

e. The location of manure application.

f. An estimate of the annual animal production and manure volume or weight produced.

g. Methods, structures or practices that will be used to reduce soil loss and prevent surface water pollution.

h. Methods or practices that will be utilized to reduce odor if spray irrigation equipment is used to apply manure.

i. When a phosphorus index is required as part of the manure management plan in accordance with 65.17(1)“d,” the following are required:

(1) The total phosphorus (as P₂O₅) available to be applied from the confinement feeding operation.

(2) A phosphorus index of each field in the manure management plan, as defined in 65.17(17)“a,” including the factors used in the calculation. A copy of the NRCS phosphorus index detailed report shall satisfy the requirement to include the factors used in the calculation.

65.17(4) *Manure management plan calculations to determine land area required for manure application.*

a. The number of acres needed for manure application for each year of the crop schedule shall be determined as follows:

(1) Until a phosphorus index is required in accordance with 65.17(1)“d,” the requirements of 65.17(18) shall be followed.

(2) When a phosphorus index is required in accordance with 65.17(1)“d,” the requirements of 65.17(17) shall be followed.

b. Operations evaluated with the master matrix pursuant to 65.10(3) that claim points for additional separation distance for the land application of manure must maintain those distances for each year of the manure management plan.

c. Nitrogen in addition to that allowed in the manure management plan may be applied up to the amounts, indicated by soil or crop nitrogen test results, necessary to obtain the optimum crop yield.

65.17(5) *Total nitrogen and total phosphorus (as P₂O₅) available from the confinement feeding operation.*

a. To determine the nitrogen available to be applied per year, the factors in Table 3, “Annual Pounds of Nitrogen Per Space of Capacity,” multiplied by the number of spaces shall be used. To determine total phosphorus (as P₂O₅) available to be applied per year, the factors in Table 3a, “Annual Pounds of Phosphorus Per Space of Capacity,” multiplied by the number of spaces shall be used. If the tables are not used to determine the nitrogen or phosphorus available to be applied, other credible sources for standard table values or the actual nitrogen and phosphorus content of the manure may be used. The actual nitrogen and phosphorus content shall be determined by a laboratory analysis along with measured volume or weight of manure from the manure storage structure or from a manure storage structure with design and management similar to the confinement feeding operation’s manure storage structure.

b. If an actual sample is used to represent the nutrient content of manure, the sample shall be taken in accordance with Iowa State University extension publication PM 1558, “Management Practices: How to Sample Manure for Nutrient Analysis.” The department may require documentation of the manure sampling protocol or take a split sample to verify the nutrient content of the operation’s manure.

65.17(6) *Optimum crop yield and crop schedule.*

a. To determine the optimum crop yield, the applicant may either exclude the lowest crop yield for the period of the crop schedule in the determination or allow for a crop yield increase of 10 percent. In using these methods, adjustment to update yield averages to current yield levels may be made if it can be shown that the available yield data is not representative of current yields. The optimum crop yield shall be determined using any of the following methods for the cropland where the manure is to be applied:

(1) Soil survey interpretation record. The plan shall include a map showing soil map units for the fields where manure will be applied. The optimum crop yield for each field shall be determined by using the weighted average of the soil interpretation record yields for the soils on the cropland where the manure is to be applied. Soil interpretation records from the Natural Resources Conservation Service shall be used to determine yields based on soil map units.

(2) USDA county crop yields. The plan shall use the county yield data from the USDA Iowa Agricultural Statistics Service.

(3) Proven yield methods. Proven yield methods may only be used if a minimum of the most recent three years of yield data for the crop is used. These yields can be proven on a field-by-field or farm-by-farm basis. Crop disaster years may be excluded when there is a 30 percent or more reduction in yield for a particular field or farm from the average yield over the most recent five years. Excluded years shall be replaced by the most recent nondisaster years. Proven yield data used to determine application rates shall be maintained with the current manure management plan. Any of the following proven yield methods may be used:

1. Proven yields for USDA Farm Service Agency. The plan shall use proven yield data or verified yield data for Farm Service Agency programs.

2. Proven yields for multiperil crop insurance. Yields established for the purpose of purchasing multiperil crop insurance shall be used as proven yield data.

3. Proven yields from other methods. The plan shall use the proven yield data and indicate the method used in determining the proven yield.

b. Crop schedule. Crop schedules shall include the name and total acres of the planned crop on a field-by-field or farm-by-farm basis where manure application will be made. A map may be used to indicate crop schedules by field or farm. The planned crop schedule shall name the crop(s) planned to be grown for the length of the crop rotation beginning with the crop planned or actually grown during the year this plan is submitted or the first year manure will be applied. The confinement feeding operation owner shall not be penalized for exceeding the nitrogen or phosphorus application rate for an unplanned crop, if crop schedules are altered because of weather, farm program changes, market factor changes, or other unforeseeable circumstances.

65.17(7) *Manure application methods and timing.*

a. The manure management plan shall identify the methods that will be used to land-apply the confinement feeding operation's manure. Methods to land-apply the manure may include, but are not limited to, surface-apply dry with no incorporation, surface-apply liquids with no incorporation, surface-apply liquid or dry with incorporation within 24 hours, surface-apply liquid or dry with incorporation after 24 hours, knifed in or soil injection of liquids, or irrigated liquids with no incorporation.

b. The manure management plan shall identify the approximate time of year that land application of manure is planned. The time of year may be identified by season or month.

65.17(8) *Location of manure application.*

a. The manure management plan shall identify each farm where the manure will be applied, the number of acres that will be available for the application of manure from the confinement feeding operation, and the basis under which the land is available.

b. A copy of each written agreement executed with the owner of the land where manure will be applied shall be maintained with the current manure management plan. The written agreement shall indicate the acres on which manure from the confinement feeding operation may be applied and the length of the agreement. A written agreement is not required if the land is owned or rented for crop production by the owner of the confinement feeding operation.

c. If a present location becomes unavailable for manure application, additional land for manure application shall be identified in the current manure management plan prior to the next manure application period.

65.17(9) *Estimate of annual animal production and manure volume or weight produced.* Volumes or weights of manure produced shall be estimated based on the numbers of animals, species, and type of manure storage used. The plan shall list the annually expected number of production animals by species. The volume of manure may be estimated based on the values in Table 5 at the end of this chapter and submitted as a part of the plan. If the plan does not use the table to determine the manure volume, other credible sources for standard table values or the actual manure volume from the confinement feeding operation may be used.

65.17(10) *Methods to reduce soil loss and potential surface water pollution.* The manure management plan shall include an identification of the methods, structures or practices that will be used to prevent or diminish soil loss and potential surface water pollution during the application of manure. Until a phosphorus index is required in accordance with 65.17(1) “d,” the current manure management plan shall maintain a summary or copy of the conservation plan for the cropland where manure from the animal feeding operation will be applied if the manure will be applied on highly erodible cropland. The conservation plan shall be the conservation plan approved by the local soil and water conservation district or its equivalent. The summary of the conservation plan shall identify the methods, structures or practices that are contained in the conservation plan. When a phosphorus index is required in accordance with 65.17(1) “d,” the manure management plan shall indicate for each field in the plan the crop rotation, tillage practices and supporting practices used to calculate sheet and rill erosion for the phosphorus index. A copy of the NRCS RUSLE2 profile erosion calculation record shall satisfy the requirement to indicate the crop rotation, tillage practices and supporting practices to calculate sheet and rill erosion. The plan shall also identify the highly erodible cropland where manure will be applied. The manure management plan may include additional information such as whether the manure will be injected or incorporated or the type of manure storage structure.

65.17(11) *Spray irrigation.* Requirements contained in subrules 65.3(2) and 65.3(3) regarding the use of spray irrigation equipment to apply manure shall be followed. A plan which has identified spray irrigation equipment as the method of manure application shall identify any additional methods or practices to reduce potential odor, if any other methods or practices will be utilized.

65.17(12) *Current manure management plan.* The owner of a confinement feeding operation who is required to submit a manure management plan shall maintain a current manure management plan at the site of the confinement feeding operation or at a residence or office of the owner or operator of the operation within 30 miles of the site. The plan shall include completed manure sales forms for a confinement feeding operation from which manure is sold. If manure management practices change, a person required to submit a manure management plan shall make appropriate changes consistent with this rule. If values other than the standard table values are used for manure management plan calculations, the source of the values used shall be identified.

65.17(13) *Record keeping.* Records shall be maintained by the owner of a confinement feeding operation who is required to submit a manure management plan. This recorded information shall be maintained for three years following the year of application or for the length of the crop rotation, whichever is greater. Effective August 25, 2006, records shall be maintained for five years following the year of application or for the length of the crop rotation, whichever is greater. Records shall be maintained at the site of the confinement feeding operation or at a residence or office of the owner or operator of the facility within 30 miles of the site. Records to demonstrate compliance with the manure management plan shall include the following:

- a. Factors used to calculate the manure application rate:
 - (1) Optimum yield for the planned crop.
 - (2) Types of nitrogen credits and amounts.
 - (3) Remaining crop nitrogen needed.
 - (4) Nitrogen content and first-year nitrogen availability of the manure.
 - (5) Phosphorus content of the manure if required in accordance with 65.17(3) “i.” If an actual sample is used, documentation shall be provided.
- b. If phosphorus-based application rates are used, the following shall be included:
 - (1) Crop rotation.
 - (2) Phosphorus removed by crop harvest of that crop rotation.
- c. Maximum allowable manure application rate.
- d. Actual manure application information:
 - (1) Methods of application when manure from the confinement feeding operation was applied.
 - (2) Date(s) when the manure from the confinement feeding operation was applied.

(3) Location of the field where the manure from the confinement feeding operation was applied, including the number of acres.

(4) The manure application rate.

e. Effective August 25, 2005, date(s) and application rate(s) of commercial nitrogen and phosphorus on fields that received manure. However, if the date and application rate information is for fields which are not owned for crop production or which are not rented or leased for crop production by the person required to keep records pursuant to this subrule, an enforcement action for noncompliance with a manure management plan or the requirements of this subrule shall not be pursued against the person required to keep records pursuant to this subrule or against any other person who relied on the date and application rate in records required to be kept pursuant to this subrule, unless that person knew or should have known that nitrogen or phosphorus would be applied in excess of maximum levels set forth in paragraph 65.17(1)“*a.*” If manure is applied to fields not owned, rented or leased for crop production by the person required to keep records pursuant to this subrule, that person shall obtain from the person who owns, rents or leases those fields a statement specifying the planned commercial nitrogen and phosphorus fertilizer rates to be applied to each field receiving the manure.

f. When a phosphorus index is required in accordance with 65.17(1)“*d.*” a copy of the current soil test lab results for each field in the manure management plan.

g. For sales of manure under 65.17(2)“*b.*” record-keeping requirements of 65.17(2)“*b*”(8) shall be followed.

65.17(14) Record inspection. The department may inspect a confinement feeding operation at any time during normal working hours and may inspect the manure management plan and any records required to be maintained. As required in Iowa Code section 459.312(12), Iowa Code chapter 22 shall not apply to the records which shall be kept confidential by the department and its agents and employees. The contents of the records are not subject to disclosure except as follows:

a. Upon waiver by the owner of the confinement feeding operation.

b. In an action or administrative proceeding commenced under this chapter. Any hearing related to the action or proceeding shall be closed.

c. When required by subpoena or court order.

65.17(15) Enforcement action. An owner required to provide the department a manure management plan pursuant to this rule who fails to provide the department a plan or who is found in violation of the terms and conditions of the plan shall not be subject to an enforcement action other than assessment of a civil penalty pursuant to Iowa Code section 455B.191.

65.17(16) Soil sampling requirements for fields where the phosphorus index must be used. Soil samples shall be obtained from each field in the manure management plan at least once every four years. Each soil sample shall be analyzed for phosphorus and pH. The soil sampling protocol shall meet all of the following requirements:

a. Acceptable soil sampling strategies include, but are not limited to, grid sampling, management zone sampling, and soil type sampling. Procedural details can be taken from Iowa State University extension publication PM 287, “Take a Good Soil Sample to Help Make Good Decisions,” NCR-13 Report 348, “Soil Sampling for Variable-Rate Fertilizer and Lime Application,” or other credible soil sampling publications.

b. Each soil sample must be a composite of at least ten soil cores from the sampling area, with each core containing soil from the top six inches of the soil profile.

c. Each soil sample shall represent no more than ten acres. For fields less than or equal to 15 acres, only one soil sample is necessary.

d. Soil analysis must be performed by a lab enrolled in the IDALS soil testing certification program.

e. The soil phosphorus test method must be an appropriate method for use with the phosphorus index. If soil pH is greater than or equal to 7.4, soil phosphorus data from the Bray-1 extraction method is not acceptable for use with the phosphorus index.

65.17(17) *Use of the phosphorus index.* Manure application rates shall be determined in conjunction with the use of the Iowa Phosphorus Index as specified by the USDA Natural Resources Conservation Service (NRCS) Iowa Technical Note No. 25.

a. The phosphorus index shall be used on each individual field in the manure management plan. The fields must be contiguous and shall not be divided by a public thoroughfare or a water source as each is defined in this chapter. Factors to be considered when a field is defined may include, but are not limited to, cropping system, erosion rate, soil phosphorus concentration, nutrient application history, and the presence of site-specific soil conservation practices.

b. When sheet and rill erosion is calculated for the phosphorus index, the soil type used for the calculation shall be the most erosive soil map unit that is at least 10 percent of the total field area.

c. The average (arithmetic mean) soil phosphorus concentration of a field shall be used in the phosphorus index.

d. Soil phosphorus concentration data is considered valid for use in the phosphorus index if the data is four years old or less and meets the requirements of 65.17(16).

e. For an original manure management plan, previous soil sampling data that does not meet the requirements of 65.17(16) may be used in the phosphorus index if the data is four years old or less. In the case of fields for which soil sampling data is used that does not meet the requirements of 65.17(16), the fields must be soil-sampled according to the requirements of 65.17(16) no more than one year after the manure management plan is approved.

f. The following are the manure application rate requirements for fields that are assigned the phosphorus index site vulnerability ratings below as determined by the NRCS Iowa Technical Note No. 25 to the NRCS 590 standard rounded to the nearest one-hundredth:

(1) Very Low (0-1).

1. Manure shall not be applied in excess of a nitrogen-based rate in accordance with 65.17(18).

2. If, pursuant to 65.17(19), manure is applied at phosphorus-based rates within soil sampling periods on fields in the Very Low risk category, each soil sample may represent up to 20 acres for the next required soil sampling.

(2) Low (>1-2).

1. Manure shall not be applied in excess of a nitrogen-based rate in accordance with 65.17(18).

2. If, pursuant to 65.17(19), manure is applied at phosphorus-based rates within soil sampling periods on fields in the Low risk category, each soil sample may represent up to 20 acres for the next required soil sampling.

(3) Medium (>2-5).

1. Manure may be applied at a nitrogen-based rate in accordance with 65.17(18) if current or planned soil conservation and phosphorus management practices predict the rating of the field to be not greater than 5 for the next determination of the phosphorus index as required by 65.17(17)“h”(3).

2. Manure shall not be applied in excess of two times the phosphorus removed with crop harvest over the period of the crop rotation.

3. If, pursuant to 65.17(19), manure is applied at phosphorus-based rates within soil sampling periods on fields in the Medium risk category, each soil sample may represent up to 20 acres for the next required soil sampling.

(4) High (>5-15). Manure shall not be applied on a field with a rating greater than 5 and less than or equal to 15 until practices are adopted which reduce the phosphorus index to at least the Medium risk category. However, prior to December 31, 2008, fields with a phosphorus index greater than 5 and less than or equal to 10 may receive manure at a phosphorus-based rate in accordance with 65.17(19) if practices will be adopted to reduce the phosphorus index to the Medium risk category.

(5) Very High (>15). Manure shall not be applied on a field with a rating greater than 15.

g. Additional commercial fertilizer may be applied as follows on fields receiving manure:

(1) Phosphorus fertilizer may be applied in addition to phosphorus provided by the manure up to amounts recommended by soil tests and Iowa State University extension publication PM 1688, "General Guide for Crop Nutrient Recommendations in Iowa."

(2) Nitrogen fertilizer may be applied in addition to nitrogen provided by the manure to meet the remaining nitrogen need of the crop as calculated in the current manure management plan. Additional nitrogen fertilizer may be applied up to the amounts indicated by soil test nitrogen results or crop nitrogen test results as necessary to obtain the optimum crop yield.

h. Updating the phosphorus index.

(1) When any inputs to the phosphorus index change, an operation shall recalculate the phosphorus index and adjust the application rates if necessary.

(2) If additional land becomes available for manure application, the phosphorus index shall be calculated to determine the manure application rate before manure is applied.

(3) An operation must submit a complete manure management plan using a new phosphorus index for each field in the manure management plan a minimum of once every four years.

65.17(18) *Requirements for application of a nitrogen-based manure rate to a field.*

a. Nitrogen-based application rates shall be based on the total nitrogen content of the manure unless the calculations are submitted to show that nitrogen crop usage rates based on plant-available nitrogen have not been exceeded for the crop schedule submitted.

b. The correction factor for nitrogen losses shall be determined for the method of application by the following or from other credible sources for nitrogen volatilization correction factors.

Knifed in or soil injection of liquids	0.98
Surface-apply liquid or dry with incorporation within 24 hours	0.95
Surface-apply liquid or dry with incorporation after 24 hours	0.80
Surface-apply liquids with no incorporation	0.75
Surface-apply dry with no incorporation	0.70
Irrigated liquids with no incorporation	0.60

c. Nitrogen-based application rates shall be based on the optimum crop yields as determined in 65.17(6) and crop nitrogen usage rate factor values in Table 4 at the end of this chapter or other credible sources.

d. A nitrogen-based manure rate shall account for legume production in the year prior to growing corn or other grass crops and shall account for any planned commercial fertilizer application.

65.17(19) *Requirements for application of a phosphorus-based manure rate to a field.*

a. Phosphorus removal by harvest for each crop in the crop schedule shall be determined using the optimum crop yield as determined in 65.17(6) and phosphorus removal rates of the harvested crop from Table 4a at the end of this chapter or other credible sources. Phosphorus crop removal shall be determined by multiplying optimum crop yield by the phosphorus removal rate of the harvested crop.

b. Phosphorus removal by the crop schedule shall be determined by summing the phosphorus crop removal values determined in 65.17(19)"a" for each crop in the crop schedule.

c. The phosphorus applied over the duration of the crop schedule shall be less than or equal to the phosphorus removed with harvest during that crop schedule as calculated in 65.17(19)"b" unless additional phosphorus is recommended by soil tests and Iowa State University extension publication PM 1688, "General Guide for Crop Nutrient Recommendations in Iowa."

d. Additional requirements for phosphorus-based rates.

(1) No single manure application shall exceed the nitrogen-based rate of the planned crop receiving the particular manure application.

(2) No single manure application shall exceed the rate that applies to the expected amount of phosphorus removed with harvest by the next four anticipated crops in the crop schedule.

e. If the actual crop schedule differs from the planned crop schedule, then any surplus or deficit of phosphorus shall be accounted for in the subsequent manure application.

f. Phosphorus in manure should be considered 100 percent available unless soil phosphorus concentrations are below optimum levels for crop production. If soil phosphorus concentrations are below optimum levels for crop production phosphorus availability, values suggested in Iowa State University extension publication PM 1811, "Managing Manure Nutrients for Crop Production" or other credible sources shall be used.

567—65.18(455B) Construction certification. A confinement feeding operation which obtains a construction permit after March 20, 1996, shall submit to the department a certification from a licensed professional engineer that the manure storage structure in which manure is stored in a liquid or semiliquid form or the egg washwater storage structure was:

1. Constructed in accordance with the design plan. If actual construction deviates from the approved plans, identify all changes and certify that the changes were consistent with the standards of these rules or statute;

2. Supervised by the licensed professional engineer or a designee of the engineer during critical points of the construction. A designee shall not be the permittee, owner of the confinement feeding operation, a direct employee of the permittee or owner, or the contractor or an employee of the contractor;

3. Inspected by the licensed professional engineer after completion of construction and before commencement of operation; and

4. Constructed in accordance with the drainage tile removal standards of subrule 65.15(1), and including a report of the findings and actions taken to comply with this subrule.

567—65.19(455B) Manure applicators certification.

65.19(1) A commercial manure service, a commercial manure service representative or a confinement site manure applicator shall not apply dry or liquid manure to land, unless the person is certified. A person is not required to be certified as a confinement site manure applicator if the person applies manure which originates from a manure storage structure which is part of a small animal feeding operation. Certification of a commercial manure service representative under this rule will also satisfy the commercial license requirement under 567—Chapter 68 only as it applies to manure removal and application. Each person who operates a manure applying vehicle or equipment must be certified individually except as allowed in subrule 65.19(7).

65.19(2) Fees.

a. Commercial manure service. Effective January 1, 2004, the fee for a new or renewed certification of a service is \$200. The commercial manure service shall designate one manager for the service and shall provide the department with documentation of the designation.

b. Commercial manure service representative. Effective January 1, 2004, the fee for a new or renewed representative certification is \$75. The manager of a commercial manure service must be certified as a commercial manure service representative, but is exempt from paying the \$75 certification fee.

c. Confinement site manure applicator. Effective January 1, 2003, the fee for a new or renewed certification is \$100. However, the fee is not required if all of the following apply:

(1) The person indicates that the person is a family member as defined in this chapter by submitting a completed form provided by the department;

(2) The person is certified as a confinement site manure applicator within one year of the date another family member was certified or whose certification as a confinement site manure applicator was renewed;

(3) The other family member certified as a confinement site manure applicator has paid the certification fee.

d. Educational fee. Effective May 30, 2003, commercial manure service representatives, managers and confinement site manure applicators shall pay an educational fee to be determined annually by the department.

e. Late fee. Renewal applications received after March 1 require that an additional \$12.50 fee be paid before the certification is renewed. An application is considered to be received on the date it is postmarked.

f. Duplicate certificate. The fee for a duplicate certificate is \$15.

65.19(3) Certification requirements. To be certified by the department as a commercial manure service, a commercial manure service representative or a confinement site manure applicator, a person must do all of the following:

a. Apply for certification on a form provided by the department.

b. Pay the required fees set forth in subrule 65.19(2).

c. Pass the examination given by the department or, in lieu of the examination, attend continuing instruction courses as described in subrule 65.19(6).

65.19(4) Certification term, renewal and grace period.

a. Certification term. Certification for a commercial manure service and commercial manure service representative shall be for a period of one year and shall expire on March 1 of each year. Certification for a confinement site manure applicator shall be for a period of three years and shall expire on December 31 of the third year. After June 30, 2001, the expiration dates of confinement site manure applicator certifications that currently expire on a date other than December 31 are automatically extended to December 31 of the year the certification expires.

b. Renewal. Application for renewal of a commercial manure service certification or a commercial manure service representative certification must be received by the department no later than March 1 of the year the certification expires. Application for renewal of a confinement site manure applicator certification must be received by the department or postmarked no later than March 1 after the year the certification expires. Application shall be on forms provided by the department and shall include:

(1) Certification renewal and educational fees.

(2) A passing grade on the certification examination or proof of attending the required hours of continuing instructional courses.

c. Substitution of employees. If a commercial manure service pays the certification fee for a representative, the service may substitute representatives. The substituted representative must be certified pursuant to 65.19(3). The service shall provide documentation to the department, on forms provided by the department, that the substitution is valid.

d. Grace period. Except as provided in this paragraph, a commercial manure service, a commercial manure service representative or a confinement site manure applicator may not continue to apply manure after expiration of a certificate. A confinement site manure applicator may continue to apply manure until March 1 following the year the certification expires, provided a complete renewal application, as provided in paragraph "b," is postmarked or received by the department prior to March 1. Commercial manure services and representatives must submit an application for certification renewal by March 1 of each year.

65.19(5) Examinations.

a. A person wishing to take the examination required to become a certified commercial manure service representative or certified confinement site manure applicator may request a listing of dates and locations of examinations. The applicant must have a photo identification card at the time of taking the examination.

b. If a person fails the examination, the person may retake the examination, but not on the same business day.

c. Upon written request by an applicant, the director will consider the presentation of an oral examination on an individual basis when the applicant has failed the written examination at least twice; and the applicant has shown difficulty in reading or understanding written questions but may be able to respond to oral questioning.

65.19(6) Continuing instruction courses in lieu of examination.

a. To establish or maintain certification, between March 1 and March 1 of the next year, a commercial manure service representative must each year either pass an examination or attend three hours of continuing instructional courses.

b. To establish or maintain certification, a confinement site manure applicator must either pass an examination every three years or attend two hours of continuing instructional courses each year.

65.19(7) Exemption from certification.

a. Certification as a commercial manure service representative is not required of a person who is any of the following:

- (1) Actively engaged in farming and who trades work with another such person.
- (2) Employed by a person actively engaged in farming not solely as a manure applicator but who applies manure as an incidental part of the person's general duties.
- (3) Engaged in applying manure as an incidental part of a custom farming operation.
- (4) Engaged in applying manure as an incidental part of the person's duties.
- (5) Applying, transporting, handling or storing manure within a period of 30 days from the date of initial employment as a commercial manure service representative if the person applying the manure is acting under direct instructions and control of a certified commercial manure service representative who is physically present at the manure application site by being in sight or immediate communication distance of the supervised person where the certified commercial service representative can communicate with the supervised person at all times.

(6) Employed by a research college to apply manure from animal feeding operations that are part of the research activities or experiments of the research college.

b. Certification as a confinement site manure applicator is not required of a person who is either of the following:

(1) A part-time employee or family member of a confinement site manure applicator and is acting under direct instruction and control of a certified confinement site manure applicator who is physically present at the manure application site by being in sight or hearing distance of the supervised person where the certified confinement site manure applicator can physically observe and communicate with the supervised person at all times.

(2) Employed by a research college to apply manure from an animal feeding operation that is part of the research activities or experiments of the research college.

65.19(8) Certified commercial manure services have the following obligations:

a. Maintain the following records of manure disposal operations for a period of three years:

(1) A copy of instructions for manure application provided by the owner of the animal feeding operation.

(2) Dates that manure was applied or sold.

(3) The manure application rate.

(4) Location of fields where manure was applied.

b. Comply with the provisions of the manure management plan (MMP) prepared for the animal feeding operation and the requirements of 65.2(455B) and 65.3(455B). If a manure management plan does not exist, the requirements of 65.2(455B) and 65.3(455B) must still be met.

c. Any tanks or equipment used for hauling manure shall not be used for hauling hazardous or toxic wastes, as defined in 567—Chapter 131, or other wastes detrimental to land application and shall not be used in a manner that would contaminate a potable water supply or endanger the food chain or public health.

d. Pumps and associated piping on manure handling equipment shall be installed with watertight connections to prevent leakage.

e. Any vehicle used by a certified commercial manure service or commercial manure service representative to transport manure on a public road shall display the certification number of the commercial manure service with three-inch or larger letters and numbers on the side of the tank or vehicle. The name and address of the certified commercial manure service representative designated as the manager shall also be prominently displayed on the side of the tank or vehicle.

f. Direct connection shall not be made between a potable water source and the tank or equipment on the vehicle.

65.19(9) Discipline of certified applicators.

a. Disciplinary action may be taken against a certified commercial manure service, a commercial manure service representative or a confinement site manure applicator on any of the following grounds:

(1) Violation of state law or rules applicable to a certified commercial manure service, a commercial manure service representative, or a confinement site manure applicator or the handling or application of manure.

(2) Failure to maintain required records of manure application or other reports required by this rule.

(3) Knowingly making any false statement, representation, or certification on any application, record, report or document required to be maintained or submitted under any applicable permit or rule of the department.

b. Disciplinary sanctions allowable are:

(1) Revocation of a certificate.

(2) Probation under specified conditions relevant to the specific grounds for disciplinary action. Additional training or reexamination may be required as a condition of probation.

c. The procedure for discipline is as follows:

(1) The director shall initiate disciplinary action.

(2) Written notice shall be given to an applicator against whom disciplinary action is being considered. The notice shall state the informal and formal procedures available for determining the matter. The applicator shall be given 20 days to present any relevant facts and indicate the person's position in the matter and to indicate whether informal resolution of the matter may be reached.

(3) An applicator who receives notice shall communicate verbally or in writing or in person with the director, and efforts shall be made to clarify the respective positions of the applicator and director.

(4) Failure to communicate facts and position relevant to the matter by the required date may be considered when determining appropriate disciplinary action.

(5) If agreement as to appropriate disciplinary sanction, if any, can be reached with the applicator and the director, a written stipulation and settlement between the department and the applicator shall be entered. The stipulation and settlement shall recite the basic facts and violations alleged, any facts brought forth by the applicator, and the reasons for the particular sanctions imposed.

(6) If an agreement as to appropriate disciplinary action, if any, cannot be reached, the director may initiate formal hearing procedures. Notice and formal hearing shall be in accordance with 561—Chapter 7 related to contested and certain other cases pertaining to license discipline.

65.19(10) Revocation of certificates.

a. Upon revocation of a certificate, application for commercial manure service representative or confinement site applicator certification may be allowed after two years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

b. Upon revocation of a certificate, application for a commercial manure service certification may be allowed after three years from the date of revocation. Any such applicant must successfully complete an examination and be certified in the same manner as a new applicant.

65.19(11) Record inspection. The department may inspect, with reasonable notice, the records maintained by a commercial manure service. If the records are for an operation required to maintain records to demonstrate compliance with a manure management plan, the confidentiality provisions of subrule 65.17(14) and Iowa Code section 459.312 shall extend to the records maintained by the commercial manure service.

567—65.20(455B) Manure storage indemnity fund. The manure storage indemnity fund created in Iowa Code chapter 455J will be administered by the department. Moneys in the fund shall be used for the exclusive purpose of administration of the fund and the cleanup of eligible facilities at confinement feeding operation sites.

65.20(1) Eligible facility site. The site of a confinement feeding operation which contains one or more animal feeding operation structures is an eligible site for reimbursement of cleanup costs if one of the following conditions exists:

a. A county has acquired title to real estate containing the confinement feeding operation following nonpayment of taxes and the site includes a manure storage structure which contains stored manure or site contamination originating from the confinement feeding operation.

b. A county or the department determines that the confinement feeding operation has caused a clear, present and impending danger to the public health or environment.

65.20(2) Site cleanup. Site cleanup includes the removal and land application or disposal of manure from an eligible facility site according to manure management procedures approved by the department. Cleanup may include remediation of documented contamination which originates from the confinement feeding operation. Cleanup may also include demolishing and disposing of animal feeding operation structures if their existence or further use would contribute to further environmental contamination and their removal is included in a cleanup plan approved by the department. Buildings and equipment must be demolished or disposed of according to rules adopted by the department in 567—Chapter 101 which apply to the disposal of farm buildings or equipment by an individual or business organization.

65.20(3) Claims against the fund. Claims for cleanup costs may be made by a county which has acquired real estate containing an eligible facility site pursuant to a tax deed. A county claim shall be signed by the chairperson of the county board of supervisors. Cleanup may be initiated by the department or may be authorized by the department based on a claim by a county.

a. Advance notice of claim. Prior to or after acquiring a tax deed to an eligible facility site, a county shall notify the department in writing of the existence of the facility and the title acquisition. The county shall request in this notice that the department evaluate the site to determine whether the department will order or initiate cleanup pursuant to its authority under Iowa Code chapter 455B.

b. Emergency cleanup condition. If a county determines that there exists at a confinement feeding operation site a clear, present and impending danger to the public health or environment, the county shall notify the department of the condition. The danger should be documented as to its presence and the necessity to avoid delay due to its increasing threat. If no cleanup action is initiated by the department within 24 hours after being notified of an emergency condition requiring cleanup, the county may provide cleanup and submit a claim against the fund.

65.20(4) Contents of a claim against the fund.

a. A county claim against the fund for an eligible site acquired by a county following nonpayment of taxes shall be submitted to the department for approval prior to the cleanup action and shall contain the following information:

(1) A copy of the advance notice of claim as described in paragraph 65.20(3)“a.”

(2) A copy of a bid by a qualified person, other than a governmental entity, to perform a site cleanup. The bid shall include a summary of the qualifications of the bidder including but not limited to prior experience in removal of hazardous substances or manure, experience in construction of confinement feeding operation facilities or manure storage structures, equipment available for conducting the cleanup, or any other qualifications bearing on the ability of the bidder to remove manure from a site. The bid must reference complying with a cleanup plan. The bid shall include a certification that the bidder has liability insurance in an amount not less than \$1 million.

(3) A copy of the tax deed to the real estate containing the eligible facility site.

(4) Name and address, if known, of the former owner(s) of the site. The claim shall also include a description of any efforts to contact the former owner regarding the removal of manure and any other necessary cleanup at the site.

(5) A response to the request in the advance notice described in paragraph 65.20(3)“a” that the department will not initiate cleanup action at the site, or that 60 days have passed from the advance notice and request.

(6) A proposed cleanup plan describing all necessary activity including manure to be removed, application rates and sites, any planned remediation of site contamination, and any structure demolition and justification.

b. A county claim against the fund for an emergency cleanup condition may be submitted following the cleanup and shall contain the following information:

(1) A copy of a bid as described in subparagraph 65.20(4)“a”(2).

(2) Name and address of the owner(s), or former owner(s), of the site or any other person who may be liable for causing the condition.

(3) Information on the response from the department to the notice given as described in paragraph 65.20(3)“b,” or if none was received, documentation of the time notice was given to the department.

(4) A cleanup plan or description of the cleanup activities performed.

65.20(5) *Department processing of claims against the fund.*

a. Processing of claims. The department will process claims in the order they are received.

b. The cleanup plan will be reviewed for acceptability to accomplish necessary actions according to subrule 65.20(2).

c. Review of bid. Upon receipt of a claim, the department will review the bid accompanying the claim. The department may consult with any person in reviewing the bid. Consideration will be given to the experience of the bidder, the bid amount, and the work required to perform the cleanup plan. If the department is satisfied that the bidder is qualified to perform the cleanup and costs are reasonable, the department will provide written approval to the county within 60 days from the date of receipt of the claim.

d. Obtaining a lower bid. If the department determines that it should seek a lower bid to perform the cleanup, it may obtain the names of qualified persons who may be eligible to perform the cleanup. One or more of those persons will be contacted and invited to view the site and submit a bid for the cleanup. If a lower bid is not received, the original bid may be accepted. If a bid is lower than the original bid submitted by the county, the department will notify the county that it should proceed to contract with that bidder to perform the cleanup.

65.20(6) *Certificate of completion.* Upon completion of the cleanup, the county shall submit a certificate of completion to the department. The certificate of completion shall indicate that the manure has been properly land-applied according to the cleanup plan and that any site contamination identified in the approved cleanup plan has been remediated and any approved structure demolition has been performed.

65.20(7) *Payment of claims.* Upon receipt of the certificate of completion, the department shall promptly authorize payment of the claim as previously approved. Payments will be made for claims in the order of receipt of certificates of completion.

65.20(8) *Subrogation.* The fund is subrogated to all county rights regarding any claim submitted or paid as provided in Iowa Code section 455J.5(5).

567—65.21(455B) Transfer of legal responsibilities or title. If title or legal responsibility for a permitted animal feeding operation and its animal feeding operation storage structure is transferred, the person to whom title or legal responsibility is transferred shall be subject to all terms and conditions of the permit and these rules. The person to whom the permit was issued and the person to whom title or legal responsibility is transferred shall notify the department of the transfer of legal responsibility or title of the operation within 30 days of the transfer. Within 30 days of receiving a written request from the department, the person to whom legal responsibility is transferred shall submit to the department all information needed to modify the permit to reflect the transfer of legal responsibility. A person who has been classified as a habitual violator under Iowa Code section 455B.191 shall not acquire legal responsibility or a controlling interest to any additional permitted confinement feeding operations for the period that the person is classified as a habitual violator. A person who has an interest in a confinement feeding operation that is the subject of a pending enforcement action shall not acquire legal responsibility or an interest to any additional permitted confinement feeding operations for the period that the enforcement action is pending.

567—65.22(455B) Validity of rules. If any part of these rules is declared unconstitutional or invalid for any reason, the remainder of said rules shall not be affected thereby and shall remain in full force and effect, and to that end, these rules are declared to be severable.

These rules are intended to implement Iowa Code sections 455B.104, 455B.134(3) “e,” 455B.171 to 455B.188, and 455B.191; Iowa Code chapter 459; and 1998 Iowa Acts, chapter 1209, sections 41 and 44 to 47.

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